

BOTSWANA NATIONAL REPORT ON THE IMPLEMENTATION OF THE UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION

**REPORT PREPARED FOR CONSIDERATION BY THE THIRD SESSION OF THE
CONFERENCE OF THE PARTIES (COP 3) TO THE UNITED NATIONS
CONVENTION TO COMBAT DESERTIFICATION (UNCCD) IN THOSE COUNTRIES
EXPERIENCING SERIOUS DROUGHT AND/OR DESERTIFICATION,
PARTICULARLY IN AFRICA.**

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EXECUTIVE SUMMARY

Botswana is a landlocked country at the centre of Southern Africa and shares borders with Zimbabwe, Zambia, Namibia and South Africa. The mean altitude above sea level is approximately 1000 m and the country's total land area is 582 000 km². Much of the country is generally flat, with gentle undulations and occasional rocky outcrops. The average annual rainfall varies from 250 mm in the extreme south-West to 650 mm in the extreme north-East. Almost all the rainfall occurs during the summer months, from October to April; the period from May to September is generally dry. Most rainfall occurs in localized showers and thunderstorms, and its incidence is highly variable both in time and space.

Evaporation rates are high and range from 1.8 m to over 2.2 m annually for surface water. Meagre and highly variable rainfall, both in time and space, combined with high evapo-transpiration rates make Botswana a water-short country where drought is a recurring hazard.

Botswana's main natural resources are range and arable land, a large wildlife population, and a variety of known and promising occurrences of minerals. Arable land is scarce. It is estimated that less than 5% of Botswana's land area is cultivable. Much of the best arable land is found in the freehold farming areas in the east. The greater portion of the land is suited to extensive beef production.

The economy of Botswana is dominated by the mineral sector which contributes about 34% of the total GDP and agriculture only contributes 4.1%. On the average the GDP grew by 6% for the entire post independence period. Expressed in 1993/94 prices, annual per capita real GDP has grown from P1 682 in 1966 to P7 863 in 1994/95. Despite the fact that Botswana is a middle income economy, poverty still prevails particularly in the rural areas where income generating opportunities are limited.

In Botswana, the Government has put in place a number of strategies that are geared towards sustainable development. These include strategies in the National Development Plans including the current NDP 8, National Conservation Strategy, Agenda 21 Implementation Plan, Community Based Development Strategy for Rural Development and Community Based Natural Resources Management Programme.

There are five broad issues covered in NDP8, namely, economic diversification, employment creation, poverty eradication, population policy and rural development. The plans and strategies meant to improve the standard of living by creation of employment opportunities and income generation are Financial Assistance Policy (FAP), Arable Lands Development Programme (ALDEP), and Labour Based Drought Relief programmes. Between 1982 and 1996, FAP projects created 10 000 jobs in manufacturing and 2 500 jobs in non-traditional agriculture, accounting for 40% of total employment in these areas.

The National Conservation Strategy which was set up in 1990 by an act of parliament, calls for a comprehensive evaluation of all the economic, social and environmental implications of

policies, programmes and projects before they are undertaken, to foster sustainable development. The Strategy also requires that all the sectoral Ministries, Departments, Local Authorities, Parastatals etc, should in the course of their work, show the due regard for the conservation and enhancement of the environment in the interest of achieving sustainable development.

In line with principles 16 and 17 of Agenda 21, Botswana has a National Policy on Natural Resources Conservation and Development which calls for a comprehensive evaluation of all the economic, social and environmental implications of major policies, programmes and projects before they are implemented, to foster sustainable development.

The internalization of environmental costs in economic decision making helps bring a system-wide perspective, a long term view which underscores prevention, and a package of ecological practices that reinforce socio-economic development. Currently, the system of Environmental Impact Assessment is being legislated for and is intended to provide for the concept of Strategic Environmental Assessment.

The concept of the Strategic Environmental Assessment has been applied to the NDP 8 through an Environment Audit which identified, described and assessed the potential beneficial and adverse environmental consequences of the plan. The audit also identified possible measures to enhance the environmental benefits or to reduce or eliminate environmental disadvantages of the proposed actions and provided information to planners, decision makers, affected communities and other interested parties regarding the full range of environmental consequences of the development planning and implementation options.

In order to foster the sustainable use and conservation of natural resources and promotes rural development through community participation as well as expand rural economic activities and reduce poverty, the Government of Botswana developed Community Based Natural Resources Management Policy (CBNRMP) and Community Based Strategy for Rural Development (CBSRD). The main objective of the CBNRMP is to promote and diversify economic development in the rural areas through the sustainable use of natural resources while the objective of the CBSRD is to introduce a more effective and sustainable approach to rural development by substantially increasing the role of community participation and community leadership structures in identifying their own economic needs and aspirations as well as formulating and implementing their own actions to address these.

As stated in the National Development Plan , sustainable use of natural resources for sustainable economic diversification, has been and continues to be a national development objective. It is to this end that even before the Rio summit , Botswana had plans and strategies to combat desertification. These are found in the sectoral Ministries and include Agricultural Resources Board, Tribal Grazing Land Policy, Arable Lands Development Programme, Forestry, Energy, Education, Trade, Poverty eradication and National Settlement Policy.

The Agricultural Resources Board has in place several legislations to control bush fires and over harvesting of natural resources. However, due in some cases to the dearth of baseline data, these legislations have not been effected.

In 1975, an integrated approach to planning and management of land resources was started to implement the Tribal Grazing Land Policy (TGLP). The policy enabled individuals or groups exclusive use of land. The hope was that individual tenure would ensure sustainable use of rangeland resources. To facilitate the implementation of the policy, appropriate planning and management systems such as Land Use Planning Groups were established at district level. At a national level, a Land Development Committee was established to coordinate national land use planning.

During the implementation of the TGLP, Government realized that there were deficiencies in the data or information on which to base planning and management decisions. This resulted in the hatching out of several initiatives particularly by the Ministry of Agriculture to map soils and develop land evaluation methodologies which assisted in the determination of land suitability.

Arable Lands Development Programme (ALDEP) was conceived in 1977 to tackle the problems of low productivity in arable agriculture, resulting from low-yielding traditional farming practices, low farm income, low employment levels and lack of necessary draught power to timely do ploughing and planting. The programme is focussed on smallholder farmers especially the poorest. Its objectives are to increase arable production with a view to reducing the food grain deficit and achieving food security in the long run; enhance rural development and welfare by raising arable incomes through improved agricultural productivity and to improve income distribution by concentrating on small holder farmers; and create productive and remunerative employment in the rural areas in order to absorb the rural-under-employment migration.

In 1996, about 39 541 farming households out of the targeted 44,000 had benefitted from the programme. Although there is dearth of information to support the contribution of ALDEP towards poverty alleviation, changes in rural social relationships indicate the ALDEP has elevated the socio-economic status of the poor and empowered them to have control of their production activities.

The Ministry of Agriculture, in collaboration with private sector initiatives, is responsible for ensuring that forest resources are developed, protected, conserved, and used sustainably to meet national demands for food, fodder, fuelwood and poles, employment creation and environmental protection. Forest inventories have been completed for the gazetted forest including the associated Sustainable Multiple Use Management Plan for that resource. The plan recommends the review of the National Forest Policy and Legislation and the valuation of the forest resource. To promote indigenous tree seedlings production and distribution to support national tree planting and woodlots, a National Tree Seed Centre Network linking Botswana to similar institutions in the Southern African Region has been constructed.

Net energy supply in Botswana shows that fuelwood accounts for 69.4%, petroleum 19.2%, coal 5.6%, electricity 5.8%, and solar energy 0.01%. Of this, the rural population which accounts for 75% of the 1.4 million people uses mainly fuelwood and paraffin and only 3% of them uses electricity. Consequently, the availability of fuelwood has now reached a critical level in certain areas in the eastern Botswana. The people most vulnerable to this shortage are generally those in the lower income bracket who are unable to purchase fuelwood and do not have the means by which fuelwood can be collected from areas beyond walking distance nor the means to purchase

other fuel supplies such as paraffin, LPG gas or electricity where available. It is in view of this that the fuelwood (bio-energy) needs assessment, availability, trade, and its environmental impact assessment will be evaluated and proper programmes and projects to address these concerns developed and implemented. The Ministry of Agriculture will take the lead role and responsibility for bio-mass activities, however the implementation will be shared with the Energy Affairs Division , NIR, Rural Industries Innovation Centre (RIIC), FAB and NCSA.

In line with the Convention on the Rights of the Child , the government of Botswana undertook a process in 1993 to review the education system. The process takes note of the environmental problems defined in the National Policy on Natural Resources Conservation and Development. The educational review process among other things, is meant to enhance the environmental component of the school syllabi. It is recognised that for children to appreciate the national and international efforts towards environmental management they ought to be educated on the same, made to participate on environmental activities and be moulded into the befitting custodians of the natural resources in the future. To this end, the UNDP has financed the Government of Botswana to design a National Environmental Education Strategy which will form a basis for the environmental education action plan. The Environmental Education Strategy acknowledges that young people represent an important target group and should be regarded as a distinct and influential force in promoting environmental awareness.

For Botswana to develop her economy, it is important that trade policies should take into account environmental concerns. The Ministry of Commerce and Industry has already taken measures to address some of the concerns. As a result of efforts of the Ministry, Botswana is a contracting member of the World Trade Organization which is responsible for removal of all trade barriers and is also addressing environmental issues.

The Government of Botswana has put in place many policies and programmes aimed at poverty alleviation and these are implemented by different sectors at the national and district levels. Specific programmes aimed at enabling the poor to achieve sustainable livelihoods by improving access to resources include targeted schemes such as the Financial Assistance Policy - for income generating projects which create employment, Arable Lands Development Programme- which assist resource-poor farmers to produce at subsistence level and raise income, and the Labour Intensive Public Works programmes- to relief unemployment.

With the financial assistance from the United Nations Development Programme (UNSO), Botswana initiated the National Action Programme at the beginning of 1997. The Ministry of Agriculture was identified as the National Focal Point for the Convention. Due to the breath of issues to be addressed by the NAP process, a multi-sectoral Task Force which includes the NGOs was established to guide and support the National Focal Point.

With the assistance of the Task Force, the National Focal Point identified stakeholders who were then targeted for consultation and awareness creation.

At the beginning of the consultation process, one(1) seminar for the District Extension Teams, including NGOs was held in Gaborone to raise their awareness about various forms of land degradation, desertification, the Convention and more importantly to assist the District Extension

Teams to prepare for the awareness and consultation campaigns within their districts. Eleven (11) seminars for community representatives were, thus, organized by the District Extension Teams in collaboration with the Task Force at the district level. Between 700 and 800 representatives of stakeholders attended these seminars.

Five (5) other seminars were held for special groups of stakeholders namely; the District Authorities, Members of the House of Chiefs, Women, Youth and Media. The seminars were intended to secure the support of these important stakeholders and to identify the roles they can play in the formulation and implementation of the National Action Programme (NAP). Three (3) seminars were also held for the local NGOs to sensitize them and explore ways in which they can participate in the NAP process. One of these seminars was held to develop networking arrangements and to identify an NGO Focal Point. The seminars generated recommendations which were tabled at the National Forum which was attended by about 180 participants including senior Government officials from various ministries, NGOs, Community representatives, Donor agencies and some Members of the Private sector.

The National Forum itself identified seven priority areas of the NAP as follows:

Poverty alleviation and Community empowerment, *inter alia* by promoting viable and sustainable alternative livelihoods,

Partnership building and networking between various stakeholders,

Capacity building of the various stakeholders such as NGOs, etc.

Developing mechanisms for mobilising and channelling financial resources for combating desertification,

Education and technology development and,

Strengthening capacity for research, information collection, analysis and dissemination.

Sustainable use and management of natural resources

Two (2) Regional Forums were also conducted after the National Forum. These were attended by a wide range of stakeholders such as Village communities, District Authorities, NGOs, some MPs and Ministers. These forums were aimed at consolidating the recommendations of the various seminars into concrete programs and creating partnership with districts and communities through development and ownership of Action Plans.

In addition to efforts on consultation and awareness creation, a number of publicity activities have been undertaken. These are the production of a brochure on how to combat desertification, a video on how local people understand desertification, and a desertification Education kit targeted at secondary schools. Three hundred (300) copies of this video have been reproduced for distribution to educational institutions and the districts. Seventy three (73) of these videos have

so far been distributed to all District Commissioners and District Officers (responsible for sub-districts), all Council Secretaries/City/Town Clerks, all Land Board Secretaries, Education centers, and Regional Agricultural Offices. These videos will be used to support awareness creation by the recipient.

Five thousand (5000) copies of Desertification Education Kit have been reprinted and will soon be launched to the Ministry of Education for subsequent incorporation into the Secondary schools curriculum.

Six Community projects have been received and only three have been funded. These are Lehututu Natural Resource Management, Rakops Tree Planting, Masingwaneng and Matsilojoe Land Reclamation, Mokobeng and Mathathane woodlots. The three funded projects are Lehututu, Mokobeng and Rakops. These projects are at different stages of development. The rest are still being processed for funding. The National Focal Point continue to make follow up to these community projects to support the community efforts.

It is now clear after the awareness and consultation phase that communities are interested in taking appropriate action. More attention is now being directed towards assisting those communities to formulate projects and to secure funding for them.

To strengthen the institutional framework of the NAP, a Consultant was engaged to look into the possibility of establishing linkages and formulating a coordination mechanism. The Consultant is yet to present the findings and recommendations to the Task Force. Arrangements are also advanced to institutionalize the NAP process. The NAP will be housed under the Soil Conservation section of the Ministry of Agriculture. Adjustments to accommodate the NAP in the National Development Plan 8 will also be made during the country's midterm reviews.

The World Day to Combat Desertification was commemorated for the first time at Mathathane which is severely affected by desertification and drought in the eastern part of Botswana. A keynote address emphasizing drought preparedness, the use of indigenous technologies to fight desertification and adoption of alternative livelihoods was delivered by Assistant Minister of Agriculture. This year's World Day to Combat Desertification will be commemorated for the second time in Botswana in the Kgalagadi district on the 17th of June 1999. This district is severely affected by land degradation. The theme of this commemoration is A Women's role in the implementation of the Convention to Combat Desertification. Likewise, a keynote address emphasizing drought preparedness and the use of indigenous technologies to fight desertification will be given by a dignitary

1.0 BACKGROUND

1.1 Location and Topography

Botswana is a landlocked country at the centre of the Southern African Plateau and shares borders with Zimbabwe, Zambia, Namibia and South Africa. The mean altitude above sea level is approximately 1000 m and the countrys total land area is 582 000 km².

Much of the country is generally flat, with gentle undulations and occasional rocky outcrops. In the North-west, the Okavango river drains inland from Angola to form the Okavango Delta; in the Central north east is a large area of calcrete plains bordering the Makgadikgadi pans. In the East, adjacent to the Limpopo drainage system, the land rises above 1 200 m, and the Limpopo valley gradually descends from 900 m in the south to 500 m at its confluence with the Shashe river. This eastern region, which straddles the North-South railway line, has a somewhat less harsh climate and more fertile soils than elsewhere; and it is here that most Batswana live.

1.2 Climate

Botswana is situated close to the sub-tropical high pressure belt of the southern hemisphere. As a result, the country is largely arid or semi-arid. The average annual rainfall varies from 250 mm in the extreme south-west to 650 mm in the extreme north-east. A secondary maximum of over 550 mm occurs in the south-east while a secondary minimum of less than 350 mm occurs in the low lying area in the extreme east.

Almost all the rainfall occurs during the summer months, from October to April; the period from May to September is generally dry. Most rainfall occurs in localized showers and thunderstorms, and its incidence is highly variable both in time and space. The volume of rainfall is also a poor indicator of its value, since there is rapid run off and drainage during the short intense storms that account for the bulk of the rain that falls.

Evaporation rates are high and range from 1.8 m to over 2.2 m annually for surface water. Meagre and highly variable rainfall, both in time and space, combined with high evapo-transpiration rates make Botswana a semi-arid country where drought is a recurring hazard.

Drought has been persistent since the early 1980s. It disastrously affected the already fragile food and agricultural situation in the country and socio-cultural structures. However, in the light of the past experience in handling drought situations, the Government successfully organised an extensive relief programme in order to alleviate the impact of drought and prevent human suffering as far a possible.

An analysis of the historical rainfall data indicates that the rainfall of Botswana is of an oscillatory nature and there is no evidence of any long term climatic change. Instead, the data suggest the occurrence of weak, but nonetheless readily discernible, cycles of 16-20 years. It is uncertain how long in the future this pattern will last, as human activities are undoubtedly altering

the chemical composition of the atmosphere, which may lead to global warming and cause regional changes in climate.

1.3 Natural resources

Botswana's main natural resources are range and arable land, a large wildlife population, and a variety of known and promising occurrences of minerals. Arable land is scarce. It is estimated that less than 5% of Botswana's land area is cultivable. Capricious rainfall makes arable agriculture a precarious undertaking. Much of the best arable land is found in the freehold farming areas in the east. Much more of Botswana's land is suited to extensive beef production.

Vegetation types are closely correlated with climate. There are belts of indigenous forests and dense bush in the Chobe in the North, sustained by relatively high rainfall in the area and there are some exploitable hard wood resources. There are also some pans surrounded by treeless grass savanna. The bulk part of the country supports scrub and tree savanna, the Mophane tree dominating in the north east and the hinterland of the Okavango. The Kalahari desert supports low scrub savanna. The interpretation of satellite imagery and surveys carried out recently have revealed that up to 17 percent of the countrys 582 000 km² shows signs of land degradation/desertification in various forms and severity. Some areas are seen as bare ground, while at other places land degradation is in the form of bush encroachment. The predominant causes of desertification in Botswana are overgrazing, deforestation, veld fires and poor cropping practices.

1.4 Economy

The economy of Botswana is dominated by the mineral sector which contributes about 34% of the total GDP and agriculture only contributed 4.1% and on average the GDP grew by 6% for the entire post independence period. Expressed in 1993/94 prices, annual per capita real GDP has grown from P1 682 in 1966 to P7 863 in 1994/95. Despite the fact that Botswana is a middle income economy poverty still prevails particularly in the rural areas where income generation opportunities are limited. Statistics reports indicate that there are approximately 114 000 farming households in Botswana which indicates that quite a substantial proportion of the population still make a living out of farming.

2.0 STRATEGIES AND PRIORITIES WITHIN THE FRAMEWORK OF SUSTAINABLE DEVELOPMENT POLICIES.

Desertification is caused by human related activities such as cutting of trees, overstocking resulting in overgrazing and over exploitation of natural resources such as thatching grass. Drought is a natural phenomenon that human beings have no control on and thus desertification can only be combated by controlling human related activities that are known to harm the environment. These human activities are mainly influenced by the prevailing socio-economic environment. Poverty has been singled out as the major factor that forces humans to over exploit the natural resources and thus promoting desertification. The government of Botswana has put in place policies and programmes that are aimed at improving the standard of living, particularly in rural areas where poverty is rampant. Some of these programmes were specifically meant to protect the environment.

This chapter provides basic information on national plans and strategies available in other social and economic areas as well as in the national plans and strategies in the field of combatting desertification developed prior to the UNCCD

2.1 National Plans and strategies available in other social and economic areas

In Botswana, the Government has put in place a number of strategies that are geared towards sustainable development. These include strategies in the National Development Plans including the current NDP 8, National Conservation Strategy, Agenda 21 Implementation Plan, Community Based Development Strategy for Rural Development and Community Based Natural Resources Management Programme.

2.1.1 National Development Plan 8

There are five broad issues covered in NDP8, namely, economic diversification, employment creation and poverty alleviation; policy reform in the public sector; provision of infrastructure and cost recovery; human capital development and population policy; and rural development , agriculture, environment, and land use policy.

The plans and strategies meant to improve the standard of living by creation of employment opportunities and income generation are Financial Assistance Policy (FAP), Arable Lands Development Programme (ALDEP), and Labour Based Drought Relief programmes. Between 1982 and 1996, FAP projects created 10 000 jobs in manufacturing and 2 500 jobs in non-traditional agriculture, accounting for 40% of total employment in these areas.

2.1.2 National Conservation Strategy

The National Conservation Strategy which was set up in 1990 by an act of parliament, calls for a comprehensive evaluation of all the economic, social and environmental implications of policies, programmes and projects before these are undertaken, to foster sustainable development. The Strategy also requires that all the sectoral Ministries, Department, Local Authorities, Parastatals etc, should in the course of their work, show due regard for the conservation and enhancement of the environment in the interest of achieving sustainable development.

2.1.3 Agenda 21 Implementation Plan

In line with principles 16 and 17 of Agenda 21, Botswana has a National Policy on Natural Resources Conservation and Development which calls for a comprehensive evaluation of all the economic, social and environmental implications of major policies, programmes and projects before they are implemented, to foster sustainable development.

The internalization of environmental costs in economic decision making helps bring a system-wide perspective, a long term view which underscores prevention, and a package of ecological practices that reinforce socio-economic development. Currently, the system of Environmental Impact Assessment is being legislated for and is intended to provide for the concept of Strategic Environmental Assessment.

The concept of the Strategic Environmental Assessment has been applied to the NDP 8 through an Environment Audit which identified, described and assessed the potential beneficial and adverse environmental consequences of the plan. The audit also identified possible measures to enhance the environmental benefits or to reduce or eliminate environmental disadvantages of the proposed actions and provided information to planners, decision makers, affected communities and other interested parties regarding the full range of environmental consequences of the development planning and implementation options.

2.1.4 Community Based Development Strategy for Rural Development (CBP)

The purpose of the CBP strategy is to expand rural economic activities and reduce poverty. In doing so, the strategy seeks to introduce a more effective and sustainable approach to rural development by substantially increasing the role of community participation and community leadership structures in identifying their own economic needs and aspirations and formulating and implementing their own actions to address these. This will require a significant shift of responsibility and control over rural development activities from central and district level to community level. It will also require a change in composition and type of development activities in order to concentrate on those activities capable of improving incomes and employment and reducing poverty. The strategy envisages a process of generating interest and involvement in CBPs, developing the roles and capabilities of the main participants, preparing and implementing community action plans and experimenting with and learning from different approaches.

The government also encourages communities to take care of the natural resources within their area of jurisdiction by promoting community based natural resources management. At the

moment this has mainly been on wildlife management in controlled hunting areas in the Northwest District and at the moment the National Conservation Strategy coordinating Agency is in the process of initiating the same for other natural resources.

2.1.5 Community Based Natural Resources Management Policy

The Community Based Natural Resources Management Policy (CBNRM) is a development approach that fosters the sustainable use and conservation of natural resources and promotes rural development through community participation and the creation of economic incentives. CBNRM aims to alleviate rural poverty and advance conservation by strengthening rural economies and empowering communities to manage resources for their long-term social, economic, and ecological benefits. The policy objectives are to promote and diversify economic development in the rural areas through the sustainable use of natural resources; conserve and enhance biodiversity by creating conditions that promote sustainable use of natural resources; devolve management rights over natural resources directly to qualifying local communities; promote community participation in the management of National Parks, Game Reserves; enable communities to obtain direct benefits from consumptive and non-consumptive use of natural resources under their management and increase the proportion of benefits from the wildlife and tourism industries that reach local citizens and communities, in particular employment, training, skills enhancement, small and medium-scale enterprises and investment opportunities

2.2 National plans or strategies in the field of combating desertification developed prior to the Convention.

As stated in the National Development Plan 8 , sustainable use of natural resources for sustainable economic diversification, has been and continues to be a national development objective. It is to this end that even before the Rio summit , Botswana had plans and strategies to combat desertification. The plans and strategies are found in the sectoral Ministries. Among these are; Agricultural Resource Board, National Conservation Strategy and continued monitoring of range resources through projects such as Botswana Range Improvement and Management Project (BRIMP) and range management research as carried out by the Department of Agricultural Research.

The Agricultural Resources Board has in place several legislations to control bush fires, over harvesting of natural resources such as the grapple plant, and land degradation through over grazing. However, due to the dearth of baseline data, these legislations have not been effected.

The National Conservation Strategy coordinating Agency (NCSA) is an institution that monitors and coordinates environmental programmes. It has to act through the line Ministries and as such it experiences problems in terms of taking measures to control environmental problems. However the NCSA has assisted in formulating legislations that institutionalised environment

impact assessment for development projects. Every two years NCSA shall publish the state of the environment report.

The major problem facing Botswana is the fact that information on the state of the range lands is inadequate. BRIMP was established specifically to monitor the use and state of the rangelands using satellite imagery and through field investigation. The project has generated limited information and is under staffed to carry out a meaningful field investigation. Limited range research is also carried out by the Department of Agricultural Research and is mainly restricted to stocking rates trials to determine the carrying capacity of the various ecological areas of Botswana. Some of the studies compare grazing systems. Other institutions such as Directorate of Research and Development have carried out studies that look at the rate of biomass regeneration in relation to temperature and humidity and this information is essential in rehabilitating deforested areas. The major challenge in combatting desertification is to collect data that can be used to measure the impact of all the interventions made to combat desertification.

2.2.1 Agriculture

2.2.1.1 Tribal Grazing Land Policy

In 1975, an integrated approach to planning and management of land resources was started to implement the Tribal Grazing Land Policy (TGLP). Land use planning at that time involved very broad zoning of tribal land for various uses. The policy enabled individuals or groups exclusive use of land. The hope was that individual tenure would ensure sustainable use of rangeland resources. To facilitate the implementation of the TGLP, appropriate planning and management systems such as Land Use Planning Groups (now District Land Use Planning Units) were established at district level. At a national level, a Land Development Committee was established to oversee district planning and coordinate national land use planning.

During the implementation of the TGLP, Government realized that there were deficiencies in the data or information on which to base planning and management decisions. This resulted in the hatching out of several initiatives particularly by the Ministry of Agriculture to map soils, conduct an inventory of forest and range resources, and to develop land evaluation methodologies which ultimately assisted in the determination of land suitability

2.2.1.2 Arable Lands Development Programme

Arable Lands Development Programme (ALDEP) was conceived in 1977 to tackle the age-old problems of low productivity in arable agriculture, resulting from low-yielding traditional farming practices, low farm income and low employment levels, lack of necessary draught power to do timely ploughing and planting, and lack of labour-saving devices of modern tillage technology.

The programme focussed on smallholder farmers especially the poorest of the poor. Its objectives are to increase arable production with a view to reducing the food grain deficit and achieving food security in the long run; enhance rural development and welfare by raising arable incomes

through improved agricultural productivity and to improve income distribution by concentrating on small holder farmers; and create productive and remunerative employment in the rural areas in order to absorb the rural-under-employment migration.

In 1996, about 39 541 farming households out of the targeted 44,000 had benefitted from the programme. Although there is dearth of information to support the contribution of ALDEP towards poverty alleviation, changes in rural social relationships indicate that ALDEP has elevated the socio-economic status of the poor and empowered them to have control of their production activities.

2.2.1.3 Forests

The Ministry of Agriculture, in collaboration with private sector initiatives, is responsible for ensuring that forest resources are developed, protected, conserved, and used sustainably to meet national demands for food, fodder, fuelwood and, poles, employment creation and environmental protection. Forest inventories have been completed for the gazetted forest including the associated Sustainable Multiple Use Management Plan for that resource. The plan recommends the review of the National Forest Policy and Legislation and the valuation of the forest resource. To promote indigenous tree seedlings production and distribution to support national tree planting and woodlots, a National Tree Seed Centre Network linking Botswana to similar institutions in the Southern African Region has been constructed.

2.2.2 Energy

Net energy supply in Botswana like other third world developing countries shows fuelwood accounts for 69.4%, petroleum 19.2%, coal 5.6%, electricity 5.8%, and solar energy 0.01%. Of this, the rural population which accounts for 75% of the 1.4 million people uses mainly fuelwood and paraffin, and only 3% of them use electricity. Consequently the availability of fuelwood has now reached a critical level in certain areas of the eastern Botswana. The people most vulnerable to this shortage are generally those in the lower income bracket who are unable to purchase fuelwood and do not have the means by which fuelwood can be collected from areas beyond walking distance nor the means to purchase other fuel supplies such as paraffin, LPG gas or electricity where available. It is in view of this that the fuelwood (bio-energy) needs assessment, availability, trade, and its environmental impact assessment is being evaluated and proper programmes and projects to address these concerns developed and implemented. The Ministry of Agriculture will take the lead role and responsibility for bio-mass activities, while the implementation will be shared with the Energy Affairs Division, Rural Industries Innovation Centre, Forestry Association of Botswana and National Conservation Strategy Agency.

2.2.3 Education

In line with the Convention on the Rights of the Child, the government of Botswana undertook a process in 1993 to review the education system. The process takes note of the environmental problems defined in the National Policy on Natural Resources Conservation and Development. The educational review process among other things, is meant to enhance the environmental component of the school syllabi. In particular, the content should reflect the environmental issues that are of interest to Botswana. It is recognised that for children to appreciate the national and international efforts towards environmental management they ought to be educated on the same, made to participate on environmental activities and be moulded into the befitting custodians of the natural resources in the future.

In order to direct the environmental education activities of Botswana the UNDP financed the Government of Botswana to design a National Environmental Education Strategy which will form a basis for the environmental education action plan. The Environmental Education Strategy acknowledges that young people represent an important target group and should be regarded as a distinct and influential force in promoting environmental awareness.

2.2.4 Trade

For Botswana to develop her economy, it is important that trade policies should take into account environmental concerns. It is becoming increasingly clear that the international demand for a more freer trade environment will impact on environment issues, and would therefore need to be reflected in national policies on trade. The Ministry of Commerce and Industry has already taken measures to address some of the concerns. As a result of efforts of the Ministry, Botswana is a contracting member of the World Trade Organization which is responsible for removal of all trade barriers and is also addressing environmental issues. Further more, the Ministry also spearheaded the introduction of environment friendly products such as the unleaded petrol introduced for the first time in Botswana in 1996. The Ministry is also considering legislation on consumer protection which will attempt to address issues relating to the environment.

2.2.5 Poverty Eradication

The Government of Botswana has put in place many policies and programmes aimed at poverty alleviation and these are implemented by the different sectors at the national and district levels. Specific programmes aimed at enabling the poor to achieve sustainable livelihoods by improving access to resources include targeted schemes such as the Financial Assistance Policy - for income generating projects which create employment, Arable Lands Development Programme- which assist resource-poor farmers to produce at subsistence level and raise income, and the Labour Intensive Public Works programmes- to relief unemployment. Social protection and emergency related schemes such as the Drought Relief Programme and Old Age Pension Scheme are implemented to further complement efforts to ensure sustainable livelihoods.

Government Policy is to provide an enabling environment conducive to the growth of the private sector in the urban and rural areas, in order to enhance participation. Further more, government is vigorously pursuing the policy on economic diversification.

2.2.6 National Settlement Policy

At independence , Botswana's population was largely rural and the majority of the population resided along the main rail-line which runs along the eastern corridor. The population was very mobile; commuting between the villages, cattle posts and lands areas. With the rapid expansion of the economic activities in the 1970s and 1980s, the pattern of settlement changed drastically. The rural-urban migration set on, where for example in 1981, 50% of the population resided within 200 km radius of Gaborone whilst by 1990, 50% of the population resided within 100 km of Gaborone.

It is in view of these that the National Settlement Policy , which is a long term comprehensive spatial development policy and whose aim is to achieve balanced development was developed. The policy seeks to integrate physical environment and economic planning as a way of achieving balanced and sustainable development of human settlement throughout the country. The objectives of the policy are to provide guidelines and long-term strategy for sustainable development of human settlements; to rationalise and promote the optimal use of land and the preservation of best arable land; to promote conservation of natural resources for the benefit of existing and future generations; and to provide guidelines for transportation and utility networks in order to strengthen the fundamental linkages and to reduce the rate of migration to urban areas.

3.0 INSTITUTIONAL MEASURES TAKEN TO IMPLEMENT THE CONVENTION

3.1 Established and Functional National Coordination Body

With the financial assistance from the United Nations Development Programme (UNSO), Botswana initiated the National Action Programme at the beginning of 1997. The Ministry of Agriculture was identified as the National Focal Point for the Convention. Due to the breadth of issues to be addressed by the NAP process, a multi-sectoral Task Force which includes the public service, donor community, the University and NGOs was established to guide and support the National Focal Point. The Task Force acts as the principal advisory body on the NAP development and implementation process. It also gives guidance and advice on ways and means of promoting participation of local NGOs, Communities and CBOs in the NAP process, and in this regard undertakes the necessary reviews at regular intervals to ensure progress. As a Government's arm charged with the responsibility of implementing the Convention to Combat Desertification and Drought, the Task Force partly uses the existing Government structures and resources to fulfil its mandate.

The NAP Management Team (PMT) which serves as the Secretariat to the Task Force is comprised of ,the Chief Land Utilization Officer who is the Project Manager, Senior Soil Conservation Officer, one United Nations Volunteer, and one Project Support Officer (short term consultant)

The Memorandum of Understanding was signed based on a 12 month work-plan with budgeted line-items, which has since formed the core of the NAP activities. The review and extension to the work-plan has been done by both the TF and UNDP every 3 or 6 months since the first 12 months ending December 1997.

3.1.1 Legal status of the Task Force

The Task Force of the National Action Programme for the Convention to Combat Desertification has no legal status .

3.2 Institutional Framework for coherent and functional desertification control

As part of the facilitation for the active participation of a wide spectra of stakeholders especially the NGO community, FONSAG was designated the National NGO focal point and representative in the Task Force. This has led to more than three NGO workshops which set to identify the role of NGOs and identified their capacity building needs with regard to their active participation in the NAP process.

The NGO community is actively courted by the NAP Project Management Team (PMT) both as a collaborating partner and as a facilitator for community interventions. This is largely due to the realization that NGOs are better placed to respond to individual community needs than the extension service. To this end, Forestry Association one of the NGOs, is facilitating a community project in Kgalagadi and other NGOs are working on similar project proposals.

3.3 NAP as part of the National Economic and Social Development plan.

To strengthen the institutional framework of the NAP, a consultancy was carried out for purposes of establishing linkages, formulating coordination mechanism and/or integrating into the NAP. The consultant is yet to present their finding and recommendation to the Task Force. Arrangements are also advanced to institutionalize the NAP process. Adjustments to accommodate the NAP in the National Development Plan 8 will also be made during the country's mid-term reviews.

3.4 Coherent and functional legal and regulatory framework

At the inception of the NAP a consultant on Environmental Legislation was engaged by the National Conservation Strategy Agency to look at Botswana's legal instruments relevant to the conservation and sustainable management of Botswana's natural resources. The Consultant was to review the existing legislation and identify gaps, conflicts, overlaps and constraints within the legislative provisions in order to propose amendments and/or consolidation of existing legislation.

The Consultant found out that there generally exists a fairly large body of legislation in Botswana concerned with environmental protection and that the legislation is fragmented, both in substance and in terms of implementation mechanisms. The Consultant also found out that pieces of legislation often fall under different Government Departments and Authorities and this creates both gaps and overlaps in the implementation of the legislation. Hence, it can be concluded that though fairly large, Botswana's environmental legislation is weak, incoherent and not functional.

4.0 THE PARTICIPATORY PROCESS IN SUPPORT OF THE PREPARATION AND IMPLEMENTATION OF THE ACTION PROGRAMME

This chapter entails verification of the extent of involvement of relevant actors such as local authorities, CBOs, NGOs, Private business, Academic institutions, Youth and Women in defining national priorities.

4.1 Effective participation of actors involved in defining national priorities

The main elements of the development of the NAP process in Botswana has been considered to be as follows ;

- # Institutional strengthening of the Nation Focal Point
- # Appointing a Technical Advisor for the project
- # Appointing a Task Force comprised of representatives of organisations key to the implementation of the NAP process
- # Strengthening linkages with and collaboration between institutions whose work involves combating desertification, including NGOs and CBOs
- # Identification of key stakeholders who are affected by desertification and those who can play a role in combatting it;
- # Raising public awareness on the extent and impact of the desertification problem through awareness raising and consultation;
- # Capacity building and strengthening of the NGOs and CBOs to secure more effective participation and contribution to the NAP process;
- # Convening a National Forum, attended by representatives of stakeholders, as a mechanism for consensus building on priority programmes and developing partnership arrangements required for the formulation and implementation of the NAP;
- # Identification, formulation and implementation of programmes and projects in the contexts of the NAP;
- # Development of financial mechanism such as National Desertification Funds for channeling resources to the local level

These were set as priority programmes by various stakeholders during the country-wide district

seminars, regional fora and the national forum.

4.1.1 Methods of participation of various actors(regular consultations or meetings and regular exchange of information - mail or e-mail networks)

To ensure the participation of a wide spectra of stakeholders the National Coordinating Body (NCB), which in the case of Botswana is the National Task Force was constituted as a multi-sectoral body , which has the powers to co-opt. The public service is represented by four ministries, whilst there are two representatives from the NGO community, one representative from the University of Botswana and one representative of the Donor community. The Ministry of Agriculture is represented by Deputy Director of Crop Production and Forestry as the Chairman of the Task Force. The Chief Land Utilization officer as the Project Manager, Chief Animal Production Officer, and Principal Range Ecologist. Ministry of Finance is represented by the Principal Officer- Rural Development. Ministry of Local Government Lands and Housing is represented by the Principal Natural Resource officer in the National Conservation Strategy coordination Agency (NCSA). Ministry of Works Transport and Communication represented by Head of Climatological Division. The Donor community represented by Sustainable Advisor-United Nations Development Program (UNDP). The NGO community represented by the NGO Focal point and one NGO. The University of Botswana represented by the Directorate of Research and Development. The Task Force hold meetings on monthly basis to draw and discuss project activities. It also organizes seminars where relevant stakeholders participate in the drawing up of programmes for combating desertification. A radio-phone in programme was also organized where individual stakeholders contributed.

4.1.2 Representatives of various actors in the national priorities identification processes (Local forums, national forum)

After the signing of the Memorandum of Understanding an extensive consultative and awareness campaign was launched targeting a wide spectra of stakeholders to help define Desertification in the local context . These seminars were conducted from January 1997 throughout the country. The participants were consulted and made aware of the National Action Programme for the Convention to Combat Desertification and Drought. Stakeholders identified their roles in the effort to combat desertification and/or make recommendations to the NAP office . The first target group was the general public where 12 district seminars were conducted in the 10 Council districts in the country. Then the consultative and awareness process targeted the specific stakeholders among which the Local Authorities were consulted from 4-5 August 1997 at a seminar held in Gaborone where 45 representatives of District Councils, Town and City councils, Land Boards and District Commissioners attended. The Youth were consulted from 3-5 April 1998 where 124 representatives of secondary schools, University, School Youth clubs and out of school Youth clubs attended. Women were consulted from 5-6 August 1998 where 53 representatives of women CBOs, women NGOs and individuals attended. The private and government media practitioner were consulted on the 14th August 1997 where 42 people participated. Members of the House of Chiefs were also consulted where 30 of them attended. The Private sector through the Botswana Confederation of Commerce Industry and Manpower

(BOCCIM) continues to be consulted throughout the country by addressing the Business Council meetings. So far, Business Council meetings in Gaborone, Ghanzi, Tsabong and Mahalapye have been addressed.

Following the awareness campaign, the National Forum was held from the 20-22 October 1997 in Gaborone, where more than 180 people attended representing all the various stakeholders that had been consulted . It was opened by the then Acting President, His Excellency F.G. Mogae . The Speaker of the National Assembly , Cabinet Ministers and Members of Parliament also attended. The purpose of the Forum was to consolidate the contributions from different stakeholders and synthesize them into one national action plan. The National Forum agreed on a number of broad issues including *inter alia* that;

- # every one in Botswana is affected and is an important stakeholder;
- # all stakeholders should participate in combating desertification;
- # recommendations made during the consultation phase should be developed into the NAP;
- # for the NAP to be effective, its main elements should be incorporated into District Development Plans, and the National Development Plan ,etc.

As a follow up to the National Forum two regional fora were held on 28th and 29th May 1998 in Francistown and on the 8th and 9th June 1998 in Gaborone to give feed back on the National forum and 153 people participated .

4.1.3 Nature and scope of information, education, and communication actions

A brochure on combating desertification has been produced. This brochure is a simplified version of actions , “Dos and Don’ts” of combating desertification. It is intended for wide distribution to the general public. Efforts are underway to introduce the school going age group to the subject of Desertification by including it in their school curricula. An Education Kit on Desertification has been produced. This Education Kit will be launched in conjunction with the Ministry of Education. The ten fact sheets of the CCD have been translated into Setswana to make sure that majority of the populace has access to the information. A video showing how people in the country perceive and understand Desertification has been produced. This video is being reproduced and distributed to a variety of institutions and organisations for further awareness purposes.

One of the contributions of the consultative process was the establishment of District Focal Points which serve as the extension of the NAP office in the districts. It has also since enabled the continuation of the consultative process in those districts that still find the need to reach a wider spectra of their constituents.

A study tour to Namibia was arranged for members of the NAP Task Force. This was intended

to facilitate exchange of experiences, and to explore ways in which the two countries can cooperate to deal with trans-border problems and sub-regional Action Programmes.

5.0 THE CONSULTATIVE PROCESS IN SUPPORT OF THE PREPARATION AND IMPLEMENTATION OF THE NAP AND THE PARTNERSHIP AGREEMENT WITH DEVELOPED COUNTRY PARTIES AND OTHER INTERESTED ENTITIES

The main thrust of this chapter is to show the degree of participation by the international partners in the preparation and implementation of the NAP and the partnership agreements established with developed country parties.

5.1 Effective support from international partners for cooperation

The thrust of the activities of the NAP has largely hitherto been consultative and awareness campaigns throughout the country. That has led to the limitation of international cooperation and participation on the development and implementation of the NAP to the initial funding of US\$ 430 000 from UNDP. But with the emphasis now shifting to the formulation of NAP policy document which identifies programme areas and the implementation of community projects of which three project proposals are under consideration, the NAP should be in position to seek international cooperation and partnership to implement interventions and activities of the Policy document. The funds provided for at the inception of the NAP process would be effectively exhausted by the end of the project extension period to September 1999.

However one Kalahari-Namib pilot area project proposal was forwarded to SADC-ELMS and the UNCCD-Secretariat for funding. The project is situated in the south-west of the country at Struizendum, 288 km from Tsabong. It is a poverty alleviation project requesting BWP 2.1 million

6.0 MEASURES TAKEN OR PLANNED WITHIN THE FRAMEWORK OF THE NATIONAL ACTION PROGRAMMES, INCLUDING MEASURES TO IMPROVE THE ECONOMIC ENVIRONMENT, CONSERVE NATURAL RESOURCES, IMPROVE INSTITUTIONAL ORGANIZATION, IMPROVE KNOWLEDGE OF DESERTIFICATION AND TO MONITOR AND ASSESS THE EFFECTS OF DROUGHT

6.1 Adequate diagnosis of past experiences

On measures to conserve natural resources, Botswana had prior to independence established traditional ways of allocating and managing tribal land and its resources through Chiefs and the Communities. In this system, access of land was assured for all citizens on a sustainable basis to ensure availability for future generations. After independence, the Land Boards were vested with

the authority to allocate land through an act of Parliament, but the management of the resources remained with the users and their communities.

In 1975, an integrated approach to planning and management of land resources was started to implement the Tribal Grazing Land Policy (TGLP). Land use planning at that time involved very broad zoning of tribal land for various uses. The policy enabled individuals or groups exclusive use of land. The hope was that individual tenure would ensure sustainable use of rangeland resources. To facilitate the implementation of the TGLP, appropriate planning and management systems such as Land Use Planning Groups (now District Land Use Planning Units) were established at district level. At a national level, a Land Development Committee was established to oversee district planning and coordinate national land use planning.

During the implementation of the TGLP, Government realized that there were deficiencies in the data or information on which to base planning and management decisions. This resulted in the hatching out of several initiatives particularly by the Ministry of Agriculture to map soils, conduct an inventory of forest and range resources and to develop land evaluation methodologies which ultimately assisted in the determination of land suitability.

6.1.1 Synthesis and evaluation of activities undertaken in the field of combating desertification

Following the successful implementation of the TGLP, a number of other policies which promoted integrated land use planning were formulated. These include the 1991 Policy on Agricultural Development which is largely a follow up of TGLP, Tourism Policy and the National Settlement Policy.

With respect to the improvement of the economic environment, the Financial Assistance Policy and Labour-Based Relief Programmes have been established. These projects have not only provided much needed infrastructure in rural areas, but have provided income to the rural populations.

As consultation is one of the pillars of democracy in Botswana, the common practice is that the public should always be made aware of Government policies and their implications. This is normally done through public meetings where all developments in a district are discussed. The meetings allow for participation by all including women. Similarly, Government through its extension staff including the national Radio station carried an extensive consultation throughout the country during the formulation and implementation of the above listed programmes.

The same procedure was followed during the consultative process and the formulation of the National Action Programme on the United Nations Convention to Combat Desertification. This has been necessary to avoid duplication and/or repeating mistakes that were made in the formulation of some programmes. In a nutshell, Botswanas National Action Programme to Combat Desertification and Drought is a product of an active participatory and country-wide consultative process. The programme is also a complimentary rather a duplicative one.

6.2 Established technical programmes and functional integrated projects to combat desertification

Six projects have been received by the NFP and are either being processed for funding under the current UNDP/UNSO funding or are already funded under the same. Guidelines for funding these projects have been drawn. The maximum amount for each qualifying project is BWP 80 000. The six projects are; a natural resource management project at Lehututu funded for BWP , a tree planting project in Rakops funded for BWP 64 000, agroforestry project in Mokobeng funded for BWP 82 000, land rehabilitation project in Masingwaneng, agroforestry and land rehabilitation project of Matsilojoe, and agroforestry/wildlife utilisation project of Mathathane. A decision was made at a meeting organised by SADC-ELMS to adopt under the NAP, projects that were formerly conceived under the UNEP sponsored Kalahari-Namib project.

The NAP process in Botswana emphasises and encourages partnership building between Government and institutions such as NGOs and Communities to fight against desertification. This is attested by the number of community initiated projects in which NGOs are active participants and facilitators. A number of NGOs namely FAB, RIIC, CORDE, are currently preparing more projects which the NFP will sell to interested donors. This includes funding from other Government programmes.

6.2.1 Inventory, adaptation and integration of projects underway within the NAP process

An inventory of programmes and projects whose objectives and initiatives are related to the NAP process identified 80 such projects. The inventory of the main programmes and projects that were identified within Gov't and outside Gov't are being evaluated for purposes of integration into the NAP. The consultancy study which has been carried out has in the draft report preliminarily recommended that all projects and programmes whose objectives and target groups are similar should be harmonised and integrated into the NAP. Among these projects are;

- # Kalahari-Namib project, whose objectives include achieving sustainable exploitation of natural resources, halting man-made land degradation processes, and improving the welfare of populations in the area through combating poverty, land degradation, and overgrazing. The activities which have taken place in Botswana include the identification of four pilot project areas and consultations in the pilot areas. A project proposal has since been developed from one of the pilot areas at Struizendum, and has been submitted for international funding consideration.
- # Livestock Development projects (3) supported by the World Bank, whose objectives were to encourage the use of rangeland resources in western Botswana. The projects were designed to improve the productivity of livestock farming while protecting the range from degradation, and to promote diversification into alternative uses of the range.
- # The National Land Management and Livestock project, whose objective is to improve the

productivity of livestock farming, protect the range from degradation, and promote diversification into alternative uses of the range. Components of this project included trek route development, water point survey, identification of communal grazing areas , wildlife farming, and the training of livestock extension staff.

- # Bush Fire Control project, whose objective is to strengthen the capacity of the Agricultural Resource Board to prevent and control bush fires more effectively and increase the network of firebreaks in the districts
- # Soil Conservation project, whose objective is to place emphasis on extension of conservation practices with concentration on labour intensive practices. The initial steps included an inventory of potentially threatened land and the identification of suitable husbandry technics.
- # Service to Livestock Owners in Communal Areas (SLOCA) project which is aimed at improving input supply network, livestock production information, training and technical assistance to livestock owners in the communal grazing areas. The intention was to improve both rangeland management activities and livestock performance which could help to reduce land degradation and rural poverty

6.2.2 Identification of new actions and planned measures

The NAP Policy Document further identifies programme areas for NAP as;

- i) Poverty alleviation
- ii) Community empowerment through implementation of community projects
- iii) Alternative Livelihood options
- iv) Partnership building and networking between various stakeholders
- v) Capacity building of various stakeholders especially CBOs and NGOs
- vi) Promotion of sustainable use and management of natural resources
- vii) Development and establishment of funding mechanism for mobilization and the channeling of such resources to the local community for combatting desertification
- viii) Education and technology development
- ix) Strengthen capacity for research, information collection, analysis, and dissemination
- x) Strengthening of drought preparedness and management, including drought contingency

plans which take into consideration seasonal and inter-annual climate predictions

- xi) Strengthening of capabilities for assessment and systematic observation of climatological, hydrological, and meteorological services for the means to provide early warning systems

6.3 Linkage achieved with Sub-Regional and Regional Action Programme (SRAP and RAP)

The institutionalization of the NAP envisaged for end of September 1999 and the adoption of the Community Based Strategy for Rural Development as a tool for the effective implementation of programmes and interventions of the NAP will demand further re-training of the relevant extension staff to better the delivery system to the affected people and areas.

Sub-regional and Regional linkages have been established by the active participation of Dr Kgathi (of the University of Botswana) in the Multi-disciplinary Scientific and Technical Consultative Committee (MSTCC). The TF also undertook a study tour to Namibia during August 1998 of which part of the tour was to visit the Gobabeb, the Desert Research Foundation facility.

Other sub-regional and regional linkages are facilitated by the sharing and exchange of information with SADC-ELMS. A good example of this is the re-evaluation and integration of the Kalahari-Namib project pilot areas into the NAP process.

7.0 FINANCIAL ALLOCATIONS FROM NATIONAL BUDGETS IN SUPPORT OF THE IMPLEMENTATION AS WELL AS FINANCIAL ASSISTANCE AND TECHNICAL COOPERATION RECEIVED AND NEEDED, IDENTIFYING AND PRIORITIZING REQUIREMENTS

This chapter gives a background on the existing financial mechanisms and measures taken in the NAP process to facilitate the access of local actors to the existing sources of funding.

7.1 Adopted financial mechanisms

In Botswana, there is currently no direct financial allocation from the Government in support of the implementation of the United Nations Convention to Combat Desertification and Drought. However the Botswana government provides funds indirectly towards implementation of programmes and projects that address desertification and drought problems. The government institutions concerned with this issues are Land Utilisation division, Range Ecology, Bee Keeping and Forestry, Agric Resource Board, Department of Wild life and National Parks, etc. Their total allocation in the NDP8 amounts to over P 81 million.

The Task Force has been operating with a budget of US\$430 000 donated by the UNDP\UNSO in Botswana. A range of stakeholders were sensitized about the availability and use of these funds. The stakeholders were also informed of the availability of funds in other existing programmes such as ALDEP, SLOCA, LWDP, Soil Conservation, Bush Fire control, Forest Development, Drought Relief, Global Environmental Facility, and Women Finance House.

7.2 NAP financing

As already mentioned in the above item, the NAP is currently financed by the UNDP\UNSO in Botswana. Discussions are underway to establish a Funding Mechanism. Furthermore, proposals to institutionalize the NAP process under the Ministry of Agriculture have passed the preliminary stage. Once institutionalized, the bulk of the NAP budget is expected to come from Government.

8.0 A REVIEW OF THE BENCHMARKS AND INDICATORS UTILISED TO MEASURE PROGRESS AND AN ASSESSMENT THEREOF

8.1 Operational mechanisms for monitoring and evaluation

There are several institutions that assess the state of rangelands in Botswana and this is done through satellite imagery which shows mostly vegetation cover, field investigation using permanent transects through which vegetation species change is monitored. Soil erosion is measured through Sediment Yield Delivery Monitoring system. Meteorological data monitored includes rainfall, temperature, atmospheric pressure, and wind velocity.

8.1.1 Establishment and/ or strengthening of national environmental monitoring and observation capacities

There is no formalised data-base for environmental issues in Botswana which the NAP-CCD can access and readily utilise. Environmental Information System (EIS) is largely a concept that was never carried out or implemented. There exist a wealth of information in repositories outside the country due to the fact that the information was collected by non-Botswana. Even to date, there is still limited expertise and information collection is ad hoc.

However, the Botswana Range Inventory and Monitoring Project (BRIMP) within the Ministry of Agriculture aims to strengthen the Government of Botswana's capacity to monitor, keep inventories of, and react to, changes in its rangelands resources, by providing information on long term changes in the country's rangelands. Changes in rangelands are processes popularly referred to as land degradation.

The following methods of rangeland monitoring systems exist;

- # remote sensing (satellite). The range assessment decision tree has enabled the separation of techniques according to spatial scale. At the coarsest (national) level, data from the NOAA VHRR satellite system is used to develop an index (normalised Difference Vegetation Index - NDVI) which is correlated to gross vegetation cover. A sustained decrease in gross vegetation cover will be used here to indicate long term vegetation change (land degradation), while no change reflects little or no degradation.

- # field surveys at regional scale. Comparative field studies across fences separating differing rangeland uses are being used to determine responses in species composition (as well as cover and structure). This gives detailed aspects of land degradation such as bush encroachment and species composition changes.

fixed points at local scale. For local scale monitoring, the option of using fixed photography supplemented with a few critical visual based measures is being explored to quantify grass biomass and woody plant cover. It is envisaged that national coverage at this level will only be achievable if this was decentralised to local level. Consequently, for this to be effective, participatory methods would need to be developed with local people, perhaps using the proposed photographic/visual method as a starting point.

The Range Ecology section in the Department of Crop Production and Forestry has expressed limited capacity in terms of personnel and resources to monitor the 400 sites across the country.

The Department of Agricultural Research also evaluates rangelands in various ecological areas by conducting stocking rate trials. In these trials they measure grass and vegetation cover, grass species composition and the performance (growth rates of steers) of cattle. At the same time the Department also studied the effects of grazing systems on the rangelands. These studies supplement information collected by the Range Ecology Section.

8.1.2 Information system on desertification at national level

The Botswana Rangeland Inventory and Monitoring Project hopes to produce annual state of the rangelands report that has to be included in the state of the environment report produced by National Conservation Strategy Agency. Although there is not much information to disseminate, there is need to establish a network that will help the exchange of information amongst the various institutions that are involved in the monitoring of the environment, in particular, range and land degradation.

8.1.3 Mechanisms for consultation concerning analysis of the results

In Botswana there is variation in terms of defining range degradation and there is no mechanism for consultation concerning the analysis of the results.

8.1.4 Feedback on evaluation for programme management

As reported earlier there is the National Task Force that monitors the implementation of the National Action Programme. The task force represents various stake holders and as such the views of the stake holders are and shall be infused as the programme is implemented.